

REMARKS

Claims 1-3 and 5 are pending in the present application. Claims 1-3 and 5 are rejected. No new matter is believed to have been entered through the various claim amendments. Further, upon belief, it is respectfully submitted that this paper is fully responsive to the outstanding Office Action.

Claim rejections under 35 U.S.C. §103

Claims 1-3 and 5 were rejected under 35 U.S.C. §103 (a) as being unpatentable over Jang (US 6,934,167).

The rejection is respectfully traversed.

The Examiner has maintained the present rejection; however, has modified it somewhat from the Office Action of October 3, 2007. In the outstanding Office Action, the Examiner has maintained his position that Jang describes the resonant current detecting means of the present application. At page 3 of the Office Action, the Examiner contends that Applicant's arguments regarding the aforementioned element (Jang discloses changing the switching frequency and does not disclose changing the on-time) were unpersuasive as the Examiner asserts that changing the switching frequency requires changing the on time and off time. He further contends that as shown in FIG. 7, i_{LS} is balanced so that the resonant currents are nearly equal.

To more particularly describe the features of claim 1, said claim is amended to recite, "a resonant current detecting means for detecting a value per half cycle of a resonant current caused by an operation of said LC resonant circuit; and a current value comparing unit comparing the

detected per-half cycle resonant current value to a threshold value and feeding the comparison result to said driving means, and said driving means drives said pair of switching means by correcting their on-state lapses of time so that their on-state resonant currents may be nearly equal to each other based on the comparison result of said current value comparing unit.”

Independent claim 3 is also somewhat similarly amended to that of independent claim 1. It is respectfully submitted that at least the aforementioned recitations of claim 1 are not described in the cited art.

Support for the aforementioned recitations of claim 1 of the present application may be found in at least page 10, line 23 thorough page 11, line 5 of the Specification which states, “The resonant current detecting current transformer 5 detects a resonant current flowing through a winding on the primary side of the transformer 1, the current value detecting unit 6 detects a value, per half cycle, of a resonant current detected by the resonant current detecting current transformer 5, and the current value comparing unit 7 compares a detected per-half cycle resonant current value to a constant threshold value. A result of the comparison by the current value comparing unit 7 is fed back to the driving means 4.”

Jang discloses changing the switching frequency and does not disclose “said driving means drives said pair of switching means by correcting their on-state lapses of time so that their on-state resonant currents may be nearly equal to each other based on the comparison result of said current value comparing unit”, as recited in claim 1 of the present application.

In Fig. 7 of Jang, i_{LS} happens to be balanced as a result of changing the switching frequency, but the pair of switching means is not controlled by on-state lapses of time active control and, therefore, the resonant current are not always nearly equal.

Applicant notes that the Office Action does not specifically reject independent claim 1. Indeed, although the detailed action states that “claims 1-3 are rejected under 35 U.S.C. 103(a)...”, the Detailed Action omits any explanation as to how Jang renders claim 1 obvious. While the rejection on pages 4-5 of the Office Action is specifically directed toward independent claim 3, the Examiner minimally states, “with respect to claims 1 and 2, Jang discloses a DC-DC converter as forth above. See claim 3 for additional details.” It is respectfully submitted that independent claims 1 and 3 contain different recitations, and as such, require separate and individual consideration.

Applicants respectfully submit that this omission by the Office Action amounts to a failure to articulate a prima facie case of unpatentability and the burden to rebut this “rejection” has not yet shifted to the Applicants. Consequently, a next Office Action rejecting claim 1 cannot properly be made final since only then would the Applicant be obligated to rebut the rejection, presuming that such an Office Action sets forth a prima facie case (See MPEP 706.07(a)).

Additionally, regarding the rejection of claim 3 on page 5 of the Office Action, the Examiner concedes, “Jang does not disclose wherein the primary side is low voltage and the secondary side is high voltage.” Further, the Examiner contends, “It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the turns ratio (Fig. 5

n) such that $N_p < N_s$. The reason for doing so is to boost the output voltage.” It is respectfully submitted that the Examiner’s contention is respectfully traversed.

As such a description is not described in Jang as conceded by the Examiner, it appears that the Examiner is taking Official Notice. It is submitted that the application of Official Notice is improper here. With respect to Official Notice, the MPEP states that “such rejections should be judiciously applied” (see MPEP 2144.03). “Official notice without documentary evidence to support an Examiner’s conclusion is permissible only in some circumstances” (see MPEP 2144.03(A)). “It would not be appropriate for the Examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of **instant and unquestionable** demonstration as being well-known” (see *ID*, emphasis added).

Further, no evidence for the Examiner’s conclusory statement is present in the record. Further, per the above, the facts asserted as well-known must be capable of instant and unquestionable demonstration as being well-known, and the Applicant does not believe that such is the case here. If the Examiner continues to further their contention, Applicants respectfully request that the Examiner provide a reference in the next Office Action offering evidence that this is the case. The legal standard for applying Official Notice under MPEP 2144.03 is rigorous, and the present application of Official Notice falls short of meeting this high standard.

Further, as independent claim 3 has been amended somewhat similarly to that of independent claim 1, the arguments presented above regarding claim 1 over Jang are applicable toward independent claim 3 where appropriate. Also, dependent claims 2 and 5 are patentable for at least the reason of their respective dependencies from independent claims 1 and 3.

In view of the foregoing, it is respectfully submitted that the rejection is overcome.

Claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over Jang (US 6,934,167) in view of Falk (US 2002/0101747).

The rejection is respectfully traversed.

As claim 5 depends from independent claim 3, the arguments presented above regarding Jang are applicable here where appropriate. Further, claim 5 is patentable for at least the reason of its dependency from independent claim 3.

In view of the foregoing, it is submitted that the rejection is overcome.

Claims 1-3 and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Meins (US 6,515,878) in view of Falk (US 2002/0101747) and further in view of Loef (US 2003/0021127).

The rejection is respectfully traversed.

Claim 1 is amended to recite, “a resonant current detecting means for detecting a value per half cycle of a resonant current caused by an operation of said LC resonant circuit; and a current value comparing unit comparing the detected per-half cycle resonant current value to a threshold value and feeding the comparison result to said driving means, and said driving means drives said pair of switching means by correcting their on-state lapses of time so that their on-state resonant currents may be nearly equal to each other based on the comparison result of said current value comparing unit.” Independent claim 3 is also somewhat similarly amended to that

of independent claim 1. It is respectfully submitted that at least the aforementioned recitations of claim 1 are not described or taught by the cited art.

In the outstanding Office Action, the Examiner concedes that Meins does not disclose sensing a current (I_{primary}). The Examiner contends, “Loef discloses a resonant DC-DC converter and teaches sensing (Fig. 1 22) the resonant current in the primary with a measuring device (Fig. 1 16) to determine the necessary operating parameters.”

Loef relates to a power supply system and describes a measuring device 16 which determines the necessary information on the controlled system, i.e., the resonant frequency, the impedance of the resonant circuit and the values for the capacitance of the resonant capacitance C_r and the leakage inductance L_r . (Loef; paragraph [0039]). Furthermore, the reference itself explicitly states that much detail is not provided regarding the measuring device as evidenced by the same paragraph, “the measuring device 16, which is not represented in more detail, contains a microprocessor with suitable control electronics for the switches T1 to T4 of the converters 12 and an A/D converter for evaluation of the measured values of the current sensor 22 in digital form.

Accordingly, it is submitted that the combination of Meins in view of Falk and further in view of Loef fails to describe or teach at least the aforementioned recitations of claim 1 of the present application.

Further, as independent claim 3 has been amended somewhat similarly to that of independent claim 1, the arguments presented above regarding claim 1 over Jang are applicable

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toward independent claim 3 where appropriate. Also, dependent claims 2 and 5 are patentable for at least the reason of their respective dependencies from independent claims 1 and 3.

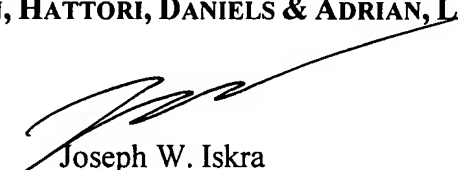
In view of the foregoing, it is submitted that the rejection is overcome.

In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,
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